Intervention: House dust mite control measures for asthma

Finding: Sufficient evidence for ineffectiveness

Potential partners to undertake the intervention:

- ☒ Nonprofits or local coalitions
- ☒ Schools or universities
- ☒ Health care providers
- ☐ State public health departments
- ☒ Hospitals, clinics or managed care organizations
- ☐ Businesses or labor organizations
- ☐ Media
- ☒ Local public health departments
- ☐ Policymakers
- ☐ Other:

Background on the intervention:

Exposure to different allergens can trigger asthma attacks in sensitized individuals. House dust is a mixture containing many different allergens, but the major allergen is derived from house dust mites. Beds, pillows, quilts, and mattresses often serve as reservoirs for house dust mites. Carpets and upholstered furniture may also contain high mite levels. Attempts to reduce mite antigen levels in order to reduce asthma symptoms is based largely on deductive reasoning and on evidence that the condition of asthmatic patients has been shown to improve in effectively dust-allergen-free environments such as hospitals or high-altitude Alpine clinics.

Findings from the systematic reviews:

All participants in the studies reviewed were diagnosed as having bronchial asthma by a physician. Their mite sensitization was assessed by skin testing, bronchial provocation tests or serum assays for specific IgE antibodies. Multiple methods for reducing mite exposure were tried, including: chemical methods; physical methods like vacuum-cleaning; heating, ventilation, freezing, and washing; barrier methods; air filtration and ionizers; and various combinations of approaches. One of the more common methods used was placing impermeable bedding encasements on the beds of individuals with asthma.

Systematic reviews of the literature did not find adequate evidence to recommend chemical or physical methods to reduce exposure to house dust mite allergens. The reason for the lack of effectiveness of these interventions is thought to be that the methods reviewed do not adequately reduce mite antigen levels, therefore; insufficient effects on asthma are seen.

Limitations/Comments:

Mite-sensitive asthmatic patients are usually sensitive to other allergens, so that successful elimination of only one allergen may have limited benefit.

References:

Gøtzsche PC, Johansen HK, Schmidt LM, Burr ML. House dust mite control measures for asthma. *The Cochrane Database of Systematic Reviews* 2004, Issue 4. Art. No.: CD001187.pub2. DOI: 10.1002/14651858.CD001187.pub2.

Recer, GM. A review of the effects of impermeable bedding encasements on dust-mite allergen exposure and bronchial hyper-responsiveness in dust-mite-sensitized patents. *Clinical and Experimental Allergy*. 34:268-275.